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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,219	11/25/2003	Masaya Ugaji	L7990.03106	4964

7590 12/04/2006  
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EXAMINER

CREPEAU, JONATHAN

ART UNIT PAPER NUMBER

1745

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/720,219

Applicant(s)

UGAJI ET AL.

Examiner

Jonathan S. Crepeau

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action addresses claims 1, 3, and 4. Claim 4 is allowed, and claims 1 and 3 are newly rejected under 35 USC 103 as necessitated by amendment. Accordingly, this action is made final.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neudecker et al (U.S. Pre-Grant Publication No. 2004/0048157). The reference is directed to a thin film battery. In [0048], the reference teaches a barrier layer between a substrate and an electrode which may comprise LIPON (lithium phosphorous oxynitride) or any of several transition metal compounds (e.g., Ti, V, Cr, Zr, Nb, Mo, Ta, W). The barrier layer, taken on its own, has ionic conductivity and is capable of functioning as a "solid electrolyte" as recited in claim 1.

The reference does not expressly teach that the barrier layer comprises both LIPON and one of the above-identified transition metals, as recited in claim 1.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the courts have held that it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose. *In re Kerkhoven*, 205 USPQ 1069 (CCPA 1980). As such, it would be obvious to combine any two of the compounds listed in [0048], thereby rendering the subject matter of claim 1 obvious. Regarding claim 3, the artisan would be sufficiently skilled to adjust the relative amounts of the compounds to achieve optimal barrier layer properties. As such, the claimed content of the transition metal element being 1 to 50 atom% to phosphorous atoms would be rendered obvious to the skilled artisan.

4. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cho et al (U.S. Pre-Grant Publication No. 2004/0072066). The reference is directed to a thin film battery. In [0022], the reference teaches an electrode protective layer which may comprise a number of materials including LIPON, lithium titanium oxides, or mixtures thereof. The protective layer functions as a "solid electrolyte" since it has ionic conductivity.

The reference does not expressly teach that the protective layer comprises both LIPON and lithium titanium oxide, as recited in claim 1.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the courts have held that it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose. *In re Kerkhoven*, 205 USPQ 1069 (CCPA 1980). As such, it would be obvious to combine the LIPON with the lithium titanium oxide, thereby rendering the subject matter of claim 1 obvious. Further, as noted above, the reference discloses in [0022] that mixtures of the materials are appropriate. Regarding claim 3, the artisan would be sufficiently skilled to adjust the relative amounts of the compounds to achieve optimal protective layer properties. As such, the claimed content of titanium being 1 to 50 atom% to phosphorous atoms would be rendered obvious to the skilled artisan.

#### ***Allowable Subject Matter***

5. Claim 4 is allowed.

6. The following is a statement of reasons for the indication of allowable subject matter:

Claim 4 recites an all-solid battery comprising a solid electrolyte comprising LIPON and a transition metal element selected from Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zr, Nb, Mo, Ru, Ta, W, Pt, and Au. As stated above, Neudecker et al. fairly suggest a barrier layer having this composition, but this layer does not function as an electrolyte in the assembled battery. Regarding Cho et al., the battery of this reference has a liquid electrolyte (see Example 1) and is not an "all-solid" battery as called for in claim 4.

*Conclusion*

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, can be reached at (571) 272-1292. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Crepeau  
Primary Examiner  
Art Unit 1745  
November 29, 2006